L Number	Hits	Search Text	DB	Time stamp
4	459	(554/80-83).CCLS.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/10/16 10:11
5	503	(426/662,604).CCLS.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/10/16 10:13
6	460	((554/80-83).CCLS.) or ((426/662,604).CCLS.) and sunflower adj lecithin	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/10/16 10:13
7	5	(((554/80-83).CCLS.) or ((426/662,604).CCLS.)) and sunflower adj lecithin	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/10/16 10:18
8	5	(((554/80-83).CCLS.) or ((426/662,604).CCLS.)) and sunflower near lecithin	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/10/16 10:18

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=> s sunflower(w)lecithin
          5040 SUNFLOWER
          2064 LECITHIN
L1   12 SUNFLOWER(W)LECITHIN

=> d l1 all 1-12

L1 ANSWER 1 OF 12 FSTA COPYRIGHT 2003 IFIS on STN
AN 2003:N0816 FSTA
TI Food composition suitable for shallow frying comprising **sunflower lecithin**.
IN Hooft Cor, T.; Kommer, M. van den; Segers, J. C.
PA Unilever NV; Unilever plc; Unilever, Netherlands
SO European Patent Application, (2003)
PI EP 1343385 A1
PRAI EP 2000-204763 20001221
DT Patent
LA English
CC N (Fats, Oils and Margarine)
CT FRYING; LECITHINS; PATENTS; FOODS; TITLE

L1 ANSWER 2 OF 12 FSTA COPYRIGHT 2003 IFIS on STN
AN 2000(06):P0930 FSTA
TI The use of anhydrous milk fat in production of protein-free dairy spreads.
AU Zmarlicki, S.; Tomczyk, M.; Krygier, K.
CS Wydzial Tech. Zywnosci, SGGW, Warsaw, Poland
SO Przemysl Spozywczy, (1999), 53 (11) 63-65, 70, 5 ref.
ISSN: 0033-250X
DT Journal
LA Polish
SL English
AB A series of 23 protein-free dairy spreads was produced using anhydrous milk fat at 40-80%, sunflower oil at 0-30% (0-42.8% in the fat phase), water at 20-30%, and **sunflower lecithin** at 0.4% as emulsifier. Products with good spreadability at 8.sup.oC and microbiological keeping characteristics were obtained with various combinations of components. Addition of 0.02-0.04% commercial butter flavouring (SD-WS-L, Chr. Hansen Poland) ensured good taste and flavour properties in the spreads.
CC P (Milk and Dairy Products)
CT DAIRY PRODUCTS; FATS MILK; LECITHINS; SPREADS; SUNFLOWER OILS; ANHYDROUS MILK FATS; DAIRY SPREADS

L1 ANSWER 3 OF 12 FSTA COPYRIGHT 2003 IFIS on STN
AN 1999(08):A1215 FSTA
TI Lecithin gum rheology and processing implications.
AU Lambourne, D.; Covey, G. H.; Chai, E.; Dunstan, D.
CS Correspondence (Reprint) address, G. H. Covey, Dep. of Chem. Eng., Univ. of Melbourne, Parkville 3052, Australia. E-mail g.covey(a)chemeng.unimelb.edu.au
SO Journal of the American Oil Chemists' Society, (1999), 76 (1) 67-72, 14 ref.
ISSN: 0003-021X
DT Journal
LA English
AB Rheology of canola [rapeseed], sunflower and soybean lecithin gum was examined by studying samples with different moisture contents produced in a batch evaporator (70.degree.C, 0.1 atm). Soybean lecithin was found to have the lowest viscosity, approx. 10 poise (100 s.sup.-.sup.1, 70.degree.C), compared to canola and **sunflower lecithin**

with viscosities of approx. 90 and 90 000 poise, respectively. High sunflower viscosity was attributed to the presence of long-chain waxes. Lecithin gum was shown to change from a Bingham (water continuous phase) to a pseudoplastic (oil continuous phase) type fluid as the moisture content of the gum decreased. Viscosity maxima occurred between 6.9 and 19.3% moisture content (100 s.sup.-.sup.1), with variation related to the oil/water ratio of the system. Rheological results indicated that vertical scraped surface evaporator design could be optimized through addition fluidizing agents prior to the evaporator and/or [exposing them to] increased heating at the evaporator outlet.
CC A (Food Sciences)
CT GUMS; LECITHINS; RHEOLOGICAL PROPERTIES; RHEOLOGY

L1 ANSWER 4 OF 12 FSTA COPYRIGHT 2003 IFIS on STN
AN 1994(11):T0024 FSTA
TI [Fractionation of **sunflower lecithin**.]
AU Zlatanov, M.
CS Inst. po Organichna Khimiya pri BAN, Bulgaria
SO Khranitelna Promishlenost, (1994), 43 (5/6) 34-36, 5 ref.
DT Journal
LA Bulgarian
SL English
AB Preparation of high phosphatidylcholine (PC) **sunflower lecithin** by fractionation in ethanol is described. 2 extraction methods were compared (mixing under turbulent conditions; mixing in a circulatory device consisting of circulation pump and heat exchanger). Effects of factionation conditions (temp., extraction time, lecithin:ethanol ratio) on lecithin yield and lecithin phospholipid (PL) and PC contents were also studied. Mixing using the circulation device resulted in higher labour efficiency and lower energy costs. Lecithin yield and PL contents were affected by extraction conditions. Extraction could be enhanced by a 2nd extraction, resulting in increased lecithin yield and a phospholipid content of e.g. 69.5% and a PC in PL content of 77%.
CC T (Additives, Spices and Condiments)
CT EMULSIFIERS; LECITHINS; LIPIDS; SEEDS; SUNFLOWER SEEDS; SUNFLOWERS

L1 ANSWER 5 OF 12 FSTA COPYRIGHT 2003 IFIS on STN
AN 1994(01):N0048 FSTA
TI **Sunflower lecithin** and possibilities for utilization.
AU Hollo, J.; Peredi, J.; Ruzics, A.; Jeranek, M.; Erdelyi, A.
CS Inst. for Chem. of the Hungarian Acad. of Sci., H-1025 Budapest, Pusztaszeri ut 59/67, Hungary
SO Journal of the American Oil Chemists' Society, (1993), 70 (10) 997-1001, 17 ref.
ISSN: 0003-021X
DT Journal
LA English
AB **Sunflower lecithin** is an important product in countries producing large amounts of sunflower oil. It has properties similar to soybean oil but tends to be more difficult to handle. Fractionation with alcohol, acylation and partial hydrolysis with phospholipase A.sub.2 were investigated as modifications to overcome the problem of handling **sunflower lecithin**. Effects of the modifications on properties of **sunflower lecithin** are discussed. Uses of **sunflower lecithin**, including as a food additive and in feeds, are considered.
CC N (Fats, Oils and Margarine)
CT EMULSIFIERS; LECITHINS; LIPIDS; SEEDS; SUNFLOWER SEEDS; SUNFLOWERS

L1 ANSWER 6 OF 12 FSTA COPYRIGHT 2003 IFIS on STN
AN 1993(11):T0033 FSTA
TI [Fractionation of lecithin.]
AU Zlatanov, M.

CS Inst. po Organichna Khimiya, BAN, Bulgaria
SO Khranitelna Promishlenost, (1993), 42 (8) 23-24, 8 ref.
DT Journal
LA Bulgarian
SL English
AB Fractionation of raw **sunflower lecithin** using 95% ethanol as extractant together with various additives (neutral glyceride oil, fatty acid methyl or ethyl esters) was investigated. Additives improved extraction yields and enabled lecithin fractions with a high content of phosphatidylcholine to be obtained. Best results were achieved by alcohol extraction for 20 min with 10% fatty acid ethyl ester; this resulted in an extraction yield of 66.7% and a phosphatidylcholine:phosphatidylethanolamine ratio of 10:1. [From En summ.]
CC T (Additives, Spices and Condiments)
CT EMULSIFIERS; ESTERS; FATTY ACID ESTERS; FRACTIONATION; LECITHINS; LIPIDS; PROCESSING

L1 ANSWER 7 OF 12 FSTA COPYRIGHT 2003 IFIS on STN
AN 1989(08):N0011 FSTA
TI [Stability of sunflower oil against autoxidation.]
AU Yanishlieva, N.; Marinova, E.
CS Inst. po Organichna Khimiya s Tsent''r po Fotokhimiya, Sofia, Bulgaria
SO Khranitelna Promishlenost, (1988), 37 (6) 17-18, 7 ref.
DT Journal
LA Bulgarian
SL Russian; English
AB Addition to sunflower oil of equimolecular concn. of ascorbic acid (0.025%), ascorbylpalmitate (0.05%), butylhydroxytoluene (BHT, 0.03%) and **sunflower lecithin** increased its oxidation stability 1.9x, 1.7x, 1.4x and 1.4x, resp. Best antioxidative effect was obtained by a mixture of 0.05% ascorbylpalmitate and 1% lecithin, which produced a stabilization factor of 2.5. [From En summ.]
CC N (Fats, Oils and Margarine)
CT ADDITIVES; ANTIOXIDANTS; OILS; OXIDATION; STABILITY; SUNFLOWER OILS; OXIDATIVE STABILITY

L1 ANSWER 8 OF 12 FSTA COPYRIGHT 2003 IFIS on STN
AN 1987(01):T0021 FSTA
TI [Manufacture of **sunflower lecithin** and its use in the chocolate industry.]
AU Ivanov, S.; Zlatanov, M.; Vakrilova, M.
CS Lab. po Biologichnoaktivni Veshchestva, Plovdiv, Bulgaria
SO Khranitelnopromishlena Nauka, (1985), 1 (6) 26-33, 17 ref.
DT Journal
LA Bulgarian
SL Russian; English
AB Method for enriching low-phospholipid (45%) **sunflower lecithin** to give a 49-64.5% phospholipid content involves selective acetone extraction under normal conditions and a lecithin:acetone ratio of 1:0.6-1.2. The resultant lecithin has a viscous-liquidy consistency, good flavour, desirable chemico-physical properties, high amino acid, heavy metal and saturated and monoenic butyric acid contents and high oxidative stability. Addition of 0.4% enriched lecithin with 52.7-60.0% phospholipid content to chocolate mass intended for manufacture of fine milk chocolate or couverture reduced the viscosity of the mass by 9.5-21.0%, confirming its value as a chocolate extender.
CC T (Additives, Spices and Condiments)
CT CHOCOLATE; LECITHINS; SUNFLOWER SEEDS; SUNFLOWER; SUNFLOWERS

L1 ANSWER 9 OF 12 FSTA COPYRIGHT 2003 IFIS on STN
AN 1982(04):T0169 FSTA
TI **Sunflower lecithin.**

AU Morrison, W. H., III
CS Field Crops Res. Univ., Richard B. Russell Agric. Res. Cent., USDA, PO Box 5677, Athens, Georgia 30613, USA
SO Journal of the American Oil Chemists' Society, (1981), 58 (10) 902-903, 10 ref.
DT Journal
LA English
AB Several properties and processing details of lecithin production are briefly reviewed, e.g. drying, degumming, cold alkali refining, and multiple washings in acetone.
CC T (Additives, Spices and Condiments)
CT LECITHINS; PROCESSING; SUNFLOWER SEEDS; SUNFLOWER; SUNFLOWER LECITHINS; SUNFLOWERS

L1 ANSWER 10 OF 12 FSTA COPYRIGHT 2003 IFIS on STN
AN 1981(09):N0439 FSTA
TI ISF/AOCS World congress.
AU Kifli, H.; Gunstone, F. D.; Parris, N. A.; Geurts van Kessel, W. S. M.; Karleskind, A.; Blanc, M.; Enzo, F.; Nicola, C.; Scholfield, C. R.; List, G. R.; Avellaneda, J. M.; Mounts, T. L.; Webers, E. J.; Strauss, K.; Cherry, J. P.; Gray, M. S.; Daun, J. K.; Davidson, L. D.; Ada, G.; Chan, H. W. S.; Matthew, J. A.; Coxon, D. T.; Fatemi, S. H.; Hammond, E. G.; Stutz, R.; Hesser, J. M.; Zehnder, C. T.; Snyder, J. M.; Dutton, H. J.; Allen, R. R.; Covey, J. E.; Morrison, W. H., III
CS International Society for Fat Research; United States of America, American Oil Chemists Society
SO Journal of the American Oil Chemists' Society, (1980), 57 (2) 79A-191A
DT Conference
LA English
AB [Continued from preceding abstr.] The composition and physical behavior of interesterified fats with special reference to palm oil, by H. Kifli & F. D. Gunstone (p. 124A). Combined use of HPLC and infrared detection for the qualitative examination of animal fats and vegetable oils, by N. A. Parris (p. 124A). Purification of lipids on a 100 mg scale by preparative HPLC, by W. S. M. Geurts van Kessel (pp. 124A-125A). Application of high performance liquid chromatography for the determination of the glyceride composition of fats and oils, by A. Karleskind & M. Blanc (p. 125A). HPLC analysis of minor components in oils, by F. Enzo & C. Nicola (p. 125A). Composition of soybean lecithin, by C. R. Scholfield (p. 126A). Degumming of soybean oil: effect of operational parameters on lecithin removal and quality, by G. R. List, J. M. Avellaneda & T. L. Mounts (p. 126A). Corn lecithin, by E. J. Weber (p. 127A). Instantization of food with lecithin in mixing process, by K. Strauss (p. 127A). **Sunflower lecithin**, by W. H. Morrison III (p. 127A). Lecithin extraction, characterization, and use with emphasis on glandless cottonseed as a commercial source, by J. P. Cherry & M. S. Gray (p. 127A). Comparison of methods for the analysis of phosphorus and lecithin in rapeseed oil, by J. K. Daun & L. D. Davidson (p. 127A). Measures of oxidations in fats, by F. Enzo & G. Ada (p. 127A). The mechanism of the rearrangement of pentadienyl hydroperoxides, by H. W. S. Chan, J. A. Matthew & D. T. Coxon (p. 127A). Analysis of oleate, linoleate and linolenate hydroperoxides in oxidized ester mixtures, by S. H. Fatemi & E. G. Hammond (p. 128A). The human food market for fatty acids, by R. Stutz & J. M. Hesser (p. 129A). Hydrogenation, practices update, by C. T. Zehnder (p. 129A). Laboratory-scale continuous hydrogenation: effect of pressure, by J. M. Snyder, T. L. Mounts, C. R. Scholfield & H. J. Dutton (p. 129A). Hydrogenation of vegetable oils with sulfur treated nickel catalysts, by R. R. Allen & J. E. Covey (p. 129A). [Continued in following abstr.]
CC N (Fats, Oils and Margarine)
CT CONFERENCE PROCEEDINGS; FATS; OILS; PROCEEDINGS; RESEARCH

L1 ANSWER 11 OF 12 FSTA COPYRIGHT 2003 IFIS on STN
AN 1977(07):N0376 FSTA
TI Study on the chemical nature of sterols contained in Bulgarian sunflower

oil.
AU Milkova, T.; Marekov, N.; Popov, S.; Wulfson, N.; Bogdanova, I.
CS Inst. of Organic Chem., Bulgarian Acad. of Sci., Sofia, Bulgaria
SO Nahrung, (1977), 21 (1) 1-6, 22 ref.
DT Journal
LA English
SL German; Russian
AB Data are given for the sterol compositions of the free and esterified sterol fractions of crude sunflower oil, the free sterol and sterol glycoside fractions of **sunflower lecithin**, the esterified sterol fraction of the soapstock, and the free sterol fraction of the deodorization distillate. Mean values for the free sterol fraction of the crude oil were (%): sitosterol, 50; campesterol, 13; stigmasterol, 25; and an unidentified sterol of mol. wt. 428, 12. Corresponding values for the sterol ester fraction were: sitosterol, 47; campesterol, 6; C29-diols plus small amounts of stigmasterol, 10; .DELTA..sup.7-stigmasterol 4; and the mol. wt. 428 sterol, 33. Sterol concn. in the other sunflower oil derivatives studied varied widely. The fatty acid composition of sterol esters from the crude oil was (%): C16:0, 18.2; C16:1, 2.2; C18:0, 6.8; C18:1, 27.6; and C18:2, 45.2.
CC N (Fats, Oils and Margarine)
CT STEROIDS; STEROLS; SUNFLOWER OILS; COMPOSITION

L1 ANSWER 12 OF 12 FSTA COPYRIGHT 2003 IFIS on STN
AN 1971(12):T0589 FSTA
TI Method of obtaining native powdered **sunflower lecithin**
.
AU Popov, A.; Gardev, M.; Yanishlieva, N.; Hristova, L.
CS Organic Chem. Inst., Bulgarian Acad. of Sci., Oil & Soap Ind. Inst., Sofia, Bulgaria
SO Journal of the American Oil Chemists' Society, (1971), 48 (6) 305-306, 3 ref.
DT Journal
LA English
AB Thermal dehydration treatment of sunflower sludge leads to a significant deterioration in the quality of the lecithin obtained. A combined scheme is suggested for simultaneous dehydration and fat removal from sunflowerr sludge at room temp.
CC T (Additives, Spices and Condiments)
CT DRYING; LECITHINS; DEHYDRATION; FAT; FATS (VEGETABLE); LECITHIN; SLUDGE; SUNFLOWER

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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	22.67	22.88

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FILE LAST UPDATED: 15 Oct 2003 (20031015/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s sunflower(w)lecithin
22920 SUNFLOWER
27823 LECITHIN
L2 35 SUNFLOWER(W)LECITHIN

=> d l2 cbib, ab 1-35

L2 ANSWER 1 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
2002:487316 Document No. 137:46481 Food composition suitable for shallow frying comprising **sunflower lecithin**. 'T Hooft, Cor; Van den Kommer, Marcelle; Segers, Jacobus Cornelis (Unilever N.V., Neth.; Unilever PLC; Hindustan Lever Ltd.). PCT Int. Appl. WO 2002049444 A1 20020627, 23 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2001-EP14264 20011203. PRIORITY: EP 2000-204763 20001221.

AB A food compn. suitable for shallow frying, comprises triglycerides (.gtoreq.60 wt.% of vegetable origin) and 0.05-3 wt.% **sunflower lecithin**. Enzymically hydrolyzed **sunflower lecithin** (optimal degree of hydrolysis approx. 0.33) may be used to further limit spattering.

L2 ANSWER 2 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
2002:382234 Document No. 137:362968 Antioxidant and anti-inflammatory effects of Vitalong in rats with lipidemia. Levitskii, A. P.; Makarenko, O. A.; Novosad, E. M.; Pustovoit, P. I.; Semaniv, O. M. (Inst. Stomatol., AMN Ukr., Odessa, Ukraine). Ukrains'kii Biokhimichnii Zhurnal, 74(1), 121-124 (Russian) 2002. CODEN: UBZKAA. Publisher: Institut Biokhimii im. O. V. Palladina NAN Ukraini.

AB Vitalong, a compn. contg. **sunflower lecithin**, the adaptogen biotrit, .beta.-carotene, .alpha.-tocopherol, and ascorbic acid, have shown antioxidant and anti-inflammatory effects in rats with lipidemia. Vitalong, prevents activation of serum elastase, blocking by this the important destructive link in atherogenesis.

L2 ANSWER 3 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
2002:316880 Document No. 137:64922 Effect of sunflower lecithins on the stability of water-in-oil and oil-in-water emulsions. Pan, L. G.; Tomas, M. C.; Anon, M. C. (Centro de Investigacion y Desarrollo en Criotecnologia de Alimentos (CIDCA), (UNLP-CONICET) Facultad de Ciencias Exactas (FCE), La Plata, 1900, Argent.). Journal of Surfactants and Detergents, 5(2), 135-143 (English) 2002. CODEN: JSDEFL. ISSN: 1097-3958. Publisher: AOCS Press.

AB Lecithins are frequently applied in the food industry as emulsifiers, viscosity regulators, and dispersing agents. The main aim of the present work was to study the emulsifying capability of diverse sunflower lecithins so as to evaluate the functionality of these byproducts, which are not extensively used at present. The exptl. results obtained for water-in-oil (W/O) emulsions showed that dispersions contg. levels of 0.1% lecithins were more stable against coalescence than a control system, whereas those with 1% emulsifying agent exhibited the opposite behavior.

On the other hand, faster sedimentation kinetics were obsd. at a concn. of 0.1% than at 1%. Lecithins with high phospholipid content, esp. phosphatidylethanolamine and phosphatidylinositol, were found to be the best emulsifying agents for W/O dispersions. In the case of oil-in-water emulsions, it was possible to observe two processes: creaming of emulsions with the addn. of 1% of lecithins, and instant creaming followed by coalescence of the cream phase in those cases corresponding to 0.1% added lecithin.

L2 ANSWER 4 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
2001:660475 Document No. 135:370681 Increased phospholipid transfer protein activity in Aspergillus oryzae grown on various industrial phospholipid sources. Asther, Michele; Record, Eric; Antona, Claudine; Asther, Marcel (Unite de Biotechnologie des Champignons Filamenteux, INRA, IFR de Biotechnologie Agro-industrielle de Marseille, ESIL, Marseille, 13288, Fr.). Canadian Journal of Microbiology, 47(7), 685-689 (English) 2001. CODEN: CJMIAZ. ISSN: 0008-4166. Publisher: National Research Council of Canada.

AB The effect of industrial C sources on phospholipid transfer protein prodn. was investigated. Phospholipid fractions of different compn. were prepd. from various plant oils (i.e., soybean, rapeseed, and sunflower) according to the Lucas Meyer extn. and purifn. process. The effect of these fractions on phospholipid transfer protein activity of cell exts. from A. oryzae grown on medium contg. these phospholipids as sole C source was studied. Phospholipid transfer activity was markedly increased by exts. contg. a particular phospholipid compn. However, this stimulation depended mainly upon the phospholipid compn. of the fraction used as fermn. substrate. Fractions enriched mainly in phosphatidylinositol (Epikuron 110), at the expense of phosphatidylcholine, were the most efficient sources for phospholipid transfer protein prodn. by A. oryzae. Max. phospholipid transfer activity, as well as biomass prodn., was increased 4.1- and 9.7-fold, resp., when cultures were supplemented with Epikuron 110 prepd. from **sunflower lecithin**, as compared to glucose-control cultures.

L2 ANSWER 5 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1999:149587 Document No. 130:268743 Lecithin gum rheology and processing implications. Lambourne, David; Covey, Geoff H.; Chai, Eugene; Dunstan, David (Department of Chemical Engineering, University of Melbourne, Parkville, 3052, Australia). Journal of the American Oil Chemists' Society, 76(1), 67-72 (English) 1999. CODEN: JAOCA7. ISSN: 0003-021X. Publisher: AOCS Press.

AB The rheol. of canola, sunflower, and soybean lecithin gum was examd. by studying samples of different moisture contents produced in a batch drying evaporator (70.degree., 0.1 atm). Soybean lecithin has the lowest viscosity, approx. 10 P (100 s-1, 70.degree.), compared to canola and **sunflower lecithin**, approx. 90 and 90,000 P, resp. The high sunflower viscosity was attributed to the presence of long-chain waxes. Lecithin gum changed from a Bingham (water continuous phase) to a pseudoplastic (oil continuous phase) type fluid as the moisture content decreased. The viscosity maxima occurred between 6.9 and 19.3% moisture content (100 s-1), with the variation related to the oil/water ratio of the system. Rheol. results indicate that vertical scraped surface evaporator design could be optimized through the addn. fluidizing agents prior to the evaporator and/or increased heating at the evaporator outlet.

L2 ANSWER 6 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1994:629315 Document No. 121:229315 Fractionation of **sunflower lecithin**. Zlatanov, Magdalena (Inst. Org. Khim., Bulg.). Khranitelna Promishlenost, 43(5-6), 34-6 (Bulgarian) 1994. CODEN: KPRSAG. ISSN: 0205-3837. Publisher: Khranitelna Promishlenost.

AB The prepn. of high phosphatidylcholine content lecithin by fractionation with ethanol was described. The conditions of fractionation including temp., time for extn., temp. for stratification, and the relative

proportions of lecithin to ethanol were investigated.

L2 ANSWER 7 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1994:105529 Document No. 120:105529 Three-component lecithin-rich health food.. Radnai, Gyorgy; Baktay, Gyorgy; Erdelyi, Anna; Janzso, Bela; Suhajda, Agnes; Bezur, Laszlo; Ernyei, Laszlo; Pais, Istvan; Sevella, Bela; et al. (Hung.). Hung. Teljes HU 63751 A2 19931028, 19 pp. (Hungarian). CODEN: HUXXBU. APPLICATION: HU 1991-3440 19911101.
AB The title food comprises 2 lecithins and a Zn- and/or Se-contg. yeast or pectin. The 1st lecithin is a lecithin from soybean, rape and/or sunflower, rich in linoleic acid. The 2nd lecithin is extd. from Lumbricidae, and is rich in eicosapentaenoic acid. The food compn. also comprises antioxidant(s). The food is anticholesteremic, useful for prevention of liver cancer, and a good source of choline.

L2 ANSWER 8 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1994:7186 Document No. 120:7186 **Sunflower lecithin** and possibilities for utilization. Hollo, J.; Peredi, J.; Ruzics, A.; Jeranek, M.; Erdelyi, A. (Cent. Res. Inst. Chem., Hung. Acad. Sci., Budapest, H-1025, Hung.). Journal of the American Oil Chemists' Society, 70(10), 997-1001 (English) 1993. CODEN: JAOCA7. ISSN: 0003-021X.
AB **Sunflower lecithin** is more pasty than natural soybean lecithin and, consequently, more difficult to handle. Thus, modifications of **sunflower lecithin** by (1) fractionation with alc., (2) partial hydrolysis with phospholipase A2, and (2) and acylation with Ac2O were studied to solve this problem. EtOH and/or EtO-H2O mixts. were favorable for the fractionation of **sunflower lecithin** (or crude gum as starting material), decreasing the phosphatide content from 73 to 60% in 34.5% yield and increasing the phosphatidylcholine content from 41 to 65%. At the range of phospholipase A2 levels and temps. studied, the hydrolysis of 2-position fatty acids was catalyzed without pH adjustment. Hydrolysis of the total amt. of phospholipids was not much dependent on the reaction time, but in the case of the 3-h reaction, hydrolysis of phosphatidylcholine was about twice as high as that of the total amt. of phospholipids. Ac2O acylation improved the fluidity and dispersibility of lecithin as well and enhanced its oil-in-water emulsifying properties. Utilization of **sunflower lecithin** directly as an additive in food and feedstuffs and after fractionation and/or modification is discussed.

L2 ANSWER 9 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1990:534551 Document No. 113:134551 Indian **sunflower lecithin**. Handoo, Sudesh Kumar; Gupta, Sanjoy; Agarwal, T. N. (Shriram Foods Fert. Ind., New Delhi, 110 015, India). Research and Industry, 35(1), 35-6 (English) 1990. CODEN: RSIDAO. ISSN: 0034-513X.
AB Lecithins obtained from dewaxed sunflower oil consisted mainly of phosphatidylcholines, phosphatidylethanolamines, phosphatidic acids, and phosphatidylinositols. The fatty acid compn. of the phosphatides followed the same patterns as the glycerides except for palmitic acid, which was found to an extent 2-3 times greater in the phosphatides than in the seed oil.

L2 ANSWER 10 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1990:221729 Document No. 112:221729 Binder systems for continuously recovered sand in the manufacture of bentonite-bonded molds and cores. Szepfoldi, Gyula; Halasz, Istvan; Kovaliczky, Kalman; Gedey, Karoly (Hungaroben KFT, Hung.). Eur. Pat. Appl. EP 363568 A2 19900418, 9 pp. DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, LI, SE. (German). CODEN: EPXXDW. APPLICATION: EP 1989-111374 19890622. PRIORITY: HU 1988-5093 19880930.
AB Sand binder systems contain vegetable lecithins and/or oils 0.45-20, hardener, hardener derivs. and/or CMC-Na salt 0.1-5.5, Na2CO3 0.3-4.5, B compds. 0.05-1.25%, and bentonite as the balance. The modified binder for regenerated sand decreases bentonite by 25-40%, eliminates the use of coal

dust, and permits the sand mixts. contg. 3.0-5.8% moisture for the manuf. of foundry molds and cores. Thus, the modified binder consisted of bentonite 89.30, sunflower oil 4.00, **sunflower lecithin** 4.0, Na2CO3 2.0, and B2O3 0.70 kg, and was used with the mixt. of recovered sand 650 and new sand 150 kg. The resulting compressive strength was 13.8-14.6 N/cm2, shear strength 2.3-2.6 N/cm2, gas permeability 95-110 units, and moisture content 4.3%, vs. 9.5-10.4, 0.9-1.4, 70.95, and 5.6 resp. for the sand mixt. contg. coal dust.

L2 ANSWER 11 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1989:191470 Document No. 110:191470 Effect of degumming reagents on the composition and emulsifying properties of canola, soybean and sunflower acetone insolubles. Smiles, Aileen; Kakuda, Yukio; MacDonald, Bruce E. (Dep. Food Sci., Univ. Guelph, Guelph, ON, N1G 2W1, Can.). JAOCS, J. Am. Oil Chem. Soc., 66(3), 348-52 (English) 1989. CODEN: JJASDH.
AB Acetone insolubles (AI) extd. from crude canola, soybean, and sunflower oils with 6 degumming reagents (water, citric, phosphoric, and oxalic acids plus acetic and maleic anhydride) were sepd. into phospholipid (PL) components by HPTLC. The sepd. PL were quantified by P detn. Statistical anal. of the PL compn. data indicated that the chem. degumming reagents did not dramatically alter the PL profiles, although some significant differences were obsd. Acetone insolubles recovered by water degumming produced the most stable oil-in-water emulsions. Those AI isolated by citric acid, acetic anhydride, and maleic anhydride treatments produced slightly less stable emulsions but showed good potential as emulsifying agents. H3PO4 and oxalic acid treatments produced AI with very poor emulsifying properties.

L2 ANSWER 12 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1989:113395 Document No. 110:113395 Sunflower oil autoxidation stability. Yanishlieva, N.; Marinova, E. (Inst. Org. Khim., Sofia, Bulg.). Khranitelna Promishlenost, 37(6), 17-18 (Bulgarian) 1988. CODEN: KPRSAG. ISSN: 0453-8315.
AB The effect of equimolar concns. of ascorbic acid (0.025%), ascorbyl palmitate (0.05%), BHT (0.03%), and of 1% tech.-grade **sunflower lecithin** on the oxidn. stability of sunflower oil was studied. Lecithin enhanced the oxidn. stability by 1.4-fold, while BHT, ascorbic acid, and ascorbyl palmitate increased it by 1.4-, 1.9-, and 1.7-fold, resp. Best antioxidative effect was obsd. with a mixt. of 0.05% ascorbyl palmitate and 1% lecithin, due to their synergistic action.

L2 ANSWER 13 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1988:569161 Document No. 109:169161 Effect of degumming reagents on the recovery and nature of lecithins from crude canola, soybean and sunflower oils. Smiles, Aileen; Kakuda, Yukio; MacDonald, Bruce E. (Dep. Food Sci., Univ. Guelph, Guelph, ON, N1G 2W1, Can.). JAOCS, J. Am. Oil Chem. Soc., 65(7), 1151-5 (English) 1988. CODEN: JJASDH.
AB Six reagents (water, citric acid, H3PO4, oxalic acid, acetic anhydride and maleic anhydride) were evaluated for their effectiveness in degumming canola, soybean, and sunflower oils. All reagents tested were significantly more effective than water in removing lecithin from all 3 oils except for acetic anhydride degumming of canola. Citric acid and H3PO4 were very effective in reducing P levels in canola oil (91 and 93% removal, resp.). For soybean oil, all reagents except water had excellent degumming ability by removing 98% P. For sunflower oil, maleic anhydride and oxalic acid produced the highest level of P removal (95 and 90%, resp.). Both citric acid and acetic anhydride were effective in removing Fe from all 3 oils during degumming (84-94%), and H3PO4 gave slightly lower values (73-87%). No significant changes in the phospholipid compn. or fatty acid profiles of the phospholipid classes were obsd. as a result of degumming with the various reagents. In general, canola phospholipids were lowest in palmitic, stearic, and linoleic acid and contained the highest levels of oleic acid when compared to soybean and sunflower phospholipids. Both citric and acetic anhydride affected the removal of

an unknown glycolipid significantly. Canola lecithin had more glycolipids than sunflower and soybean lecithins.

L2 ANSWER 14 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1987:182615 Document No. 106:182615 Method for preparation of chromatographically pure phosphatidylcholine from commercial **sunflower lecithin**. Stefanov, K.; Seizova, K. (Inst. Org. Chem., Sofia, 1040, Bulg.). Izvestiya po Khimiya, 19(4), 528-33 (Bulgarian) 1986. CODEN: IZKHDX. ISSN: 0324-0401.
AB Com. **sunflower lecithin** in general contains 40-50% neutral and 35-45% polar lipids, e.g., phosphatidycholine (PC), phosphatidylethanolamine (PE) and phosphatidylinositol (PI) in approx. equal quantities. The isolation of PC-enriched fraction was based on the acylation of PE and partly of PI at room temp. in a CHCl3-pyridine soln. with a 5-fold excess of Ac2O. The reaction mixt. was pptd. with Me2CO and dissolved in EtOH. The soln. contg. >85% PC can be used directly as a starting material for the prepn. of liposomes or purified by column chromatog. on silica or on alumina and eluted by CHCl3-MeOH.

L2 ANSWER 15 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1987:118360 Document No. 106:118360 Homogeneous lecithin from commercial phosphatides. Mukhamedova, Kh. S.; Tolibaev, I.; Glushenkova, A. I. (Inst. Khim. Rastit. Veshchestv, Tashkent, USSR). Khimiya Prirodnykh Soedinenii (6), 775-6 (Russian) 1986. CODEN: KPSUAR. ISSN: 0023-1150.
AB Phosphatide concs. (byproducts from manuf. of soybean and sunflower oils) contained 38-40% lecithin. By treating phosphatide concs. with chloroform, acetone, and chloroform-methanol, chromatog. homogenous lecithin prepns. were obtained. The compn. and positional distribution of fatty acids of thus obtained com. soybean and sunflower lecithins were detd., and data are tabulated. In general. extd. fatty acids were mainly in position 1 and C18:2 was mainly in position 2.

L2 ANSWER 16 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1986:496302 Document No. 105:96302 Phospholipid concentrates, particulatly from agricultural by-products. Fabics, Ferenc, Mrs.; Borodi, Attila; Peredi, Jozsef; Kolloros, Jozsef, Mrs.; Palcso, Jozsef; Barati, Peter; Szep, Jozsef (Herbaria Orszagos Gyogynovenyforgalmi Kozos Vallalat, Hung.; Novenyolajipari es Mososzergyarto Vallalat). Hung. Teljes HU 37876 A2 19860328, 20 pp. (Hungarian). CODEN: HUXXBU. APPLICATION: HU 1984-927 19840308.
AB Aq. EtOH is a selective solvent for phosphatides, and can be used for the extn. of phosphatides from byproducts of soybean or sunflower oil degumming. Thus, 100 g crude **sunflower lecithin** (58.2% phosphatides, 40% oil, 0.5% water) was mixed with 200 mL 70% EtOH for 30 min, followed by phase sepn. and solvent removal. The extn. was repeated. The 1st ext. contained 3.10 g phosphatide/5.15 g total material and the 2nd ext. 2.40 g phosphatide/3.00 g total material. The residue left after the 2 extns. was kept overnight, decanted, the bottom phase concd. and the conc. kept overnight. Following phase sepn. the bottom layer was heated to evap. the solvent. The residue (35 g) contained 70% phosphatides.

L2 ANSWER 17 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1986:33236 Document No. 104:33236 Phosphatide components of **sunflower lecithin**. Kovacs, Alojzia; Jeranek, Maria (Novenyolaj Mososzeripari Kutatoint., Budapest, 1106, Hung.). Olaj, Szappan, Kozmetika, 34(3), 71-5 (Hungarian) 1985. CODEN: OSZKAT. ISSN: 0472-8602.
AB Phosphatidylcholamines, phosphatidylcholines, and phosphatidylinositols, phosphatidic acids, and lysolecithin were sepd. from plant lecithins by TLC and detd. by a micro-P method. Phosphatidylcholine was the most abundant phosphatide in all samples (soybean, sunflower, and rape lecithins). The fatty acid compn. of the phosphatides was also detd. There was little difference in phosphatide compn. between lecithin samples

obtained by estn. and by pressing.

L2 ANSWER 18 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1985:597639 Document No. 103:197639 **Sunflower lecithin.**
Morrison, W. Herbert, III (Richard B. Russell Agric. Res. Cent., ARS, Athens, GA, 30613, USA). AOCS Monograph, 12(Lecithins), 97-103 (English) 1985. CODEN: AOMODZ. ISSN: 0731-4183.
AB A review with 20 refs., esp. on the lipid and fatty acid compn. of **sunflower lecithin.**

L2 ANSWER 19 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1985:546981 Document No. 103:146981 Cosmetics containing plant lecithins. (Nisshin Oil Mills, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 60094903 A2 19850528 Showa, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1983-200726 19831028.
AB Cosmetics contain hydrogenated lecithins extd. from seeds of soybeans, corn, rice, etc., since these lecithins are stable and have excellent emollient properties. Thus, an emollient cream was prepd. by mixing stearic acid 2, stearyl alc. 7, reduced lanolin 2, squalane 5, and octyldodecanol 6% by wt. at 60-65.degree., and to this mixt. was added a mixt. of polyoxyethylene cetyl ether 1, glyceryl monostearate 1, a highly purified soybean lecithin 4, propylene glycol 5, q.s. preservative, antioxidant, and perfume, and H2O to 100% by wt.

L2 ANSWER 20 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1983:503926 Document No. 99:103926 Study of phospholipid concentrates used in chocolate production. Todorova, Z.; Palaveeva, Ts. (Bulg.). Maslo-Sapunena Promishlenost, 18(3-4), 41-6 (Bulgarian) 1982. CODEN: MSBYAV. ISSN: 0369-190X.
AB Bulgarian sunflower and soybean lecithins were dark-brown, and had a bitter taste and a high peroxide no. Water, fat, volatile substances, and Et2O-insol. contents were high, whereas low phospholipid and P contents provided for a low emulsifying capacity. Some parameters of Hungarian **sunflower lecithin** were slightly better, but all 3 samples were inferior to Harhus Oliefabrik As and Staley soybean lecithins. All soybean lecithins contained more phosphatidylcholine than did sunflower lecithins which were high in phosphatides and polyphosphatidic acids.

L2 ANSWER 21 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1982:121000 Document No. 96:121000 Rapid method for determining the stability against oxidation of phospholipids and phospholipid concentrates. Ivanov, S.; Palaveeva, Ts.; Gurdev, M.; Totova, P. (Univ. "P. Khilendarski", Plovdiv, Bulg.). Maslo-Sapunena Promishlenost, 17(3), 1-8 (Bulgarian) 1981. CODEN: MSBYAV. ISSN: 0369-190X.
AB A phospholipid conc. sample (.apprx.1.5 g) is dissolved in Et2O, mixed with Na2SO4, filtered, dehydrated, and the purified sample (.apprx.1.2 g) is dissolved in 20 mL of a 6% CHCl3 soln. This soln. is transferred to a bath with filter paper stripes. The strips are removed after 3-4 s and exposed to air for 2-3 min. Phospholipids from 1 strip are extd. with Et2O, weighed, and the peroxide value is detd. by the method of A. Popov and N. Janishlieva (1969), based on titrn. with Na2S2O3. The remaining strips are dried at 75.degree., the peroxide values are detd. at various intervals between 30 and 60 min, and the phospholipid stability value is calcd. from data obtained. The oxidative stability of sunflower and soybean lecithins was detd. by this method.

L2 ANSWER 22 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1981:585625 Document No. 95:185625 **Sunflower lecithin.**
Morrison, W. H., III (Field Crops Res. Unit, Richard B. Russell Agric. Res. Cent., Athens, GA, 30613, USA). JAOCS, J. Am. Oil Chem. Soc., 58(10), 902-3 (English) 1981. CODEN: JJASDH.
AB A review with 10 refs. on the recovery of lecithin from sunflower seeds.

L2 ANSWER 23 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1981:513684 Document No. 95:113684 Interphase activity and micelle formation of lecithin in nonpolar liquids. Martovshchuk, V. I.; Mgebrishvili, T. V.; Paukova, A. V. (USSR). Fosfolipidy Rastitel'n. i Mikrobn. Lipidov, L. 41-5 From: Ref. Zh., Khim. 1981, Abstr. No. 13R410 (Russian) 1980.
AB Title only translated.

L2 ANSWER 24 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1981:138083 Document No. 94:138083 Study of the fatty acid composition of phospholipids isolated from sunflower and soybean lecithin. Palaveeva, Ts. (Inst. Rastitel. Masla, Prot. Mieshti Sredstva, Sofia, Bulg.). Maslo-Sapunena Promishlenost, 16(2), 25-35 (Bulgarian) 1980. CODEN: MSBYAV. ISSN: 0369-190X.
AB *Phosphatidylcholine and phosphatidylethanolamine were the main* phospholipids of sunflower and soybean lecithins. The phosphatidylcholines contained 32-8% linoleic acid which exceeded by 3 times its content in the original triglycerides. The phosphatidylethanolamines contained more C16:0 and C18:0 fatty acids than did the original triglycerides. **Sunflower lecithin** phosphatidylethanolamines contained 30% long-chain fatty acids which were absent in the original oil. Satd. fatty acids were high in lysophosphatidylcholines and lysoethanolamines of both lecithins. The fatty acid compn. of phosphatidic acids, phosphatidylserines, and phosphatidylinositols was different from that of the original triglycerides.

L2 ANSWER 25 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1981:98005 *Document No. 94:98005 Additive for pesticidal sprays.* Kalocsai, Gyorgy; Hanak, Andor; Szalay, Laszlo (Agrokemia Szovetkezet, Hung.). Hung. Teljes HU 18326 19800628, 14 pp. (Hungarian). CODEN: HUXXBU. APPLICATION: HU 1978-AO461 19780210.
AB The phytotoxic effect of pesticide compns. contg. 55-93% oils, such as paraffin oils and <10% emulsifier(s) was completely eliminated by 0.5-15.0 wt.% lecithins, such as soybean and other plant lecithins. Thus, ATLOX 775 emulsifier 2.5, Na dioctyl sulfosuccinate 2.5, and a 6:4 mixt. of sunflower seed oil and **sunflower lecithin** 5 were added with stirring to 90 parts paraffin oil contg. 20% arom. and unsatd. constituents. The formulation was not phytotoxic when tested on apple.

L2 ANSWER 26 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1980:5295 Document No. 92:5295 Nutrient medium for mass growing of predaceous insects, especially the common aphid lion. Yazlovetskii, I. G.; Nepomnyashchaya, A. M.; Sumenkova, V. V.; Mencher, E. M. (All-Union Scientific-Research Institute of Biological Methods of Plant Protection, USSR). U.S.S.R. SU 688161 19790930 From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1979, (36), 67. (Russian). CODEN: URXXAF. APPLICATION: SU 1978-2590675 19780302.
AB The yield of 1st-instar larvae was increased by adding peptone 3.67-3.73, yeast ext. 3.26-3.30, wheat germ ext. 3.19-3.50, saccharose [57-50-1] 4.34-4.96, **sunflower lecithin** 0.0388-0.0543, and emulsifier 0.090-0.93 wt.% to the medium contg. Na3PO4 0.038-0.040, vitamin B12 0.000003-0.0000032, choline chloride 0.038-0.040, ascorbic acid 0.075-0.081, *cholesterol 0.0078-0.0109, and soybean oil 0.0388-0.0543* wt.%, with the remainder being distd. water. Tween 80 [9005-65-6] may be used as the emulsifier. The encapsulation process was controlled by adding neutral red [553-24-2] dye in amts. 0.017-0.020% of the wt. of the medium.

L2 ANSWER 27 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1979:21091 Document No. 90:21091 Recovery of oil-containing highly purified phosphatidylcholines. Betzing, Hans (Nattermann, A., und Cie. G.m.b.H., Fed. Rep. Ger.). Ger. Offen. DE 2718797 19781102, 13 pp. Addn. to Ger. Offen. 1,617,680. (German). CODEN: GWXXBX. APPLICATION: DE 1977-2718797 19770427.

AB Highly purified oil-contg. lecithins with a high content of essential fatty acids are prepd. by extg. the crude phosphatide mixt. with a C1-3 alc. and immediately treating the ext. with alumina. Thus, 1 kg sunflower crude phosphatide contg. 35% oil was stirred with 5 L EtOH for 1 h at 40.degree. under N, allowed to stand 1 h at room temp., and filtered. The filtrate contg. 75 g solids and 30 g sunflower oil was mixed with alumina (300 g for 1.5 L) for 2.5 h at room temp. under N, allowed to settle, the liq. decanted, and the alumina washed with EtOH. The EtOH solns. were filtered, and the solvent was distd. in vacuum under N at 40.degree. to give 45 g of a viscous oil-contg. lecithin essentially free of cephalins. The product contained 64% phosphatidylcholine and 30% oil.

L2 ANSWER 28 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1978:545309 Document No. 89:145309 Comparative studies of some imported soy lecithins and Bulgarian soy and **sunflower lecithin**.
Stefanov, K.; Gurdev, M.; Popov, A.; Palaveeva, Ts. (Bulg.).
Maslo-Sapunena Promishlenost, 13(3), 368-83 (Bulgarian) 1977. CODEN: MSBYAV. ISSN: 0369-190X.
AB Bulgarian lecithin samples had low stability, dark color, unpleasant odor, the bitter taste of burnt sugar, high contents of fat and water, and low content of phospholipids. Bulgarian **sunflower lecithin** contained more sterols and glycolipids, and less cephalins and phosphatidylcholines than did Bulgarian soybean lecithin. Bulgarian lecithins had high contents of oxidn. products with max. absorption at 250 nm. The **sunflower lecithin** also had high absorption at 300 and 350 nm. Brief heating of the **sunflower lecithin** caused browning.

L2 ANSWER 29 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1975:576912 Document No. 83:176912 Thin-layer and gel chromatographic investigation of plant oil lecithins. Kurucz, Eva; Biacs, Peter; Erdelyi, Anna (Hung.). Olaj, Szappan, Kozmetika, 24(1), 1-5 (Hungarian) 1975. CODEN: OSZKAT. ISSN: 0472-8602.
AB Com. lecithin samples were analyzed by thin-layer chromatog. (Abramson, D. Blecher, M, 1964) and by gel chromatog. on Sephadex LH 20. The pure lecithin content in com. lecithins obtained from rape and sunflower oil was 52-60%. There was no difference in the phospholipid, steroid glycoside and glycolipid content between the various samples. The **sunflower lecithin** contained more proteins that the rape lecithin.

L2 ANSWER 30 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1972:443335 Document No. 77:43335 Activity of lecithin obtained from Helianthus annuus in experimental hyperlipemia. Simionovici, M.; Tocusanu, M.; Boesteanu, N.; Cristescu, Y. (Chem. Pharm. Res. Inst., Bucharest, Rom.). Herba Polonica, 17(4), 404-9 (English) 1971. CODEN: HPBIA9. ISSN: 0018-0599.
AB Both oral and i.v. administration of lecithin (150 mg/kg), extd. from Helianthus annuus (sunflower) seeds, prevented hyperlipemia in rats. Lecithin administration decreased cholesterol [57-88-5] in blood plasma, aorta, and liver; decreased triolein incorporation; and prevented fatty liver and disorders of protein metabolism.

L2 ANSWER 31 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1971:450691 Document No. 75:50691 Method of obtaining native powdered **sunflower lecithin**. Popov, A.; Gardev, M.; Yanishlieva, N.; Khristova, L. (Org. Chem. Inst., Bulg. Acad. Sci., Sofia, Bulg.). Journal of the American Oil Chemists' Society, 48(6), 308-9 (English) 1971. CODEN: JAOCA7. ISSN: 0003-021X.
AB Thermal dehydration treatment of sunflower sludge leads to a significant deterioration of the quality of the product obtained. A combined scheme is suggested for simultaneous dehydration and fat removal from sunflower sludge at room temp.

L2 ANSWER 32 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1971:447626 Document No. 75:47626 Continuous production of lecithin from sunflower seed extraction oil. Marinchevski, I.; Krustanov, P.; Iliev, I.; Pekhlivanov, N. (Bulg.). Maslo-Sapunena Promishlenost, 7(1), 37-42 (Bulgarian) 1971. CODEN: MSBYAV. ISSN: 0369-190X.
AB The app. for continuous production of lecithin from sunflower seed extn. oils in a plant near Sofia is described. The process includes the following basic stages: oil hydration in an injector mixer, hydration foots sepn. by separators, and hydration foots drying in a thin layer vacuum dryer. The lecithin produced by this continuous method is of higher quality than that produced by the old (batch) method.

L2 ANSWER 33 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1969:19010 Document No. 70:19010 Bulgarian **sunflower lecithin** composition and utilization potential. Gospodinova, Vera; Tevekelev, D. (Bulg.). Izvestiya na Instituta po Khranene, Bulgarska Akademiya na Naukite, 7, 41-6 (Bulgarian) 1968. CODEN: IKBMAV. ISSN: 0521-6494.
AB The production of **sunflower lecithin** from hydration sediments of expressed sunflower oil as well as a simplified technology on the basis of hydration sediments of extd. oil yielded from sunflower expeller were studied. The dehydrated hydration sediments were dissolved in refined sunflower oil, the oil soln. was filtered, hydrated, and the phosphatides dried. The resulting lecithin had very good organoleptic properties, its phospholipid content was 60-70%, and neutral refined oil content was 30-40%. When the simplified technology was applied, the dissoln. of dried hydration sediments in refined oil and filtration were avoided, which mainly resulted in the production of lecithin with unsatisfactory organoleptic properties and low level of phospholipids. Water and ash contents were detd. in 7 samples of lecithin produced from extd. sunflower by the simplified method. Also were detd. the qual. compn. of the ash, the insol. substances in Me2CO and C6H6, and total phospholipids. By thin-layer chromatog. individual phospholipids were identified and the chief constituents, phosphatidylcholine and phosphatidylethanolamine, were quant. detd. To minimize the fatty waxy consistency of the lecithin the use of phosphatide bases on solid and liq. carriers was proposed.

L2 ANSWER 34 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1965:465682 Document No. 63:65682 Original Reference No. 63:12105b-c Influence of **sunflower lecithin** on lipid metabolism and evolution of atherosclerosis. Kosulina, O. N.; Smolyanskii, B. L. (Sanit.-Hyg. Med. Inst., Leningrad). Terapevticheskii Arkhiv, 37(5), 75-9 (Russian) 1965. CODEN: TEARAI. ISSN: 0040-3660.
AB Lecithin-enriched diets were given for 20-58 days to 58 atherosclerotic patients (44 women and 14 men) between 45 and 73 years of age. The clin. manifestations of atherosclerosis, as well as the lipid metabolism, were improved. Six to 8 g. lecithin was used. Blood cholesterol went down in all cases by an av. of 31.9 mg. %; the lecithin titer in blood serum rose by 30.5 mg. %. The relation between .alpha.- and .beta.-lipoproteins in the blood became normal in most cases. The lecithin therapy had no effect on the blood proteins.

L2 ANSWER 35 OF 35 CAPLUS COPYRIGHT 2003 ACS on STN
1936:55472 Document No. 30:55472 Original Reference No. 30:7371d-e Separation of lecithin from sunflower oil. Raspopina, A. Masloboino-Zhirovoe Delo, 12, 239-40 (Unavailable) 1936. CODEN: MZHDAD. ISSN: 0369-304X.
AB The possibilities of extg. lecithin from sunflower oil are discussed.